REMARKS

Amendment summary

Claim 1 is amended to recite that coating materials for coating surfaces of the nanocrystals are eliminated from the surfaces of the nanocrystals. Support for this amendment may be found at least, e.g., at paragraph No. [0052] of the present specification.

No new matter is added by this Amendment, and Applicants respectfully submit that entry of this Amendment is proper.

Response to rejections based on Bertram

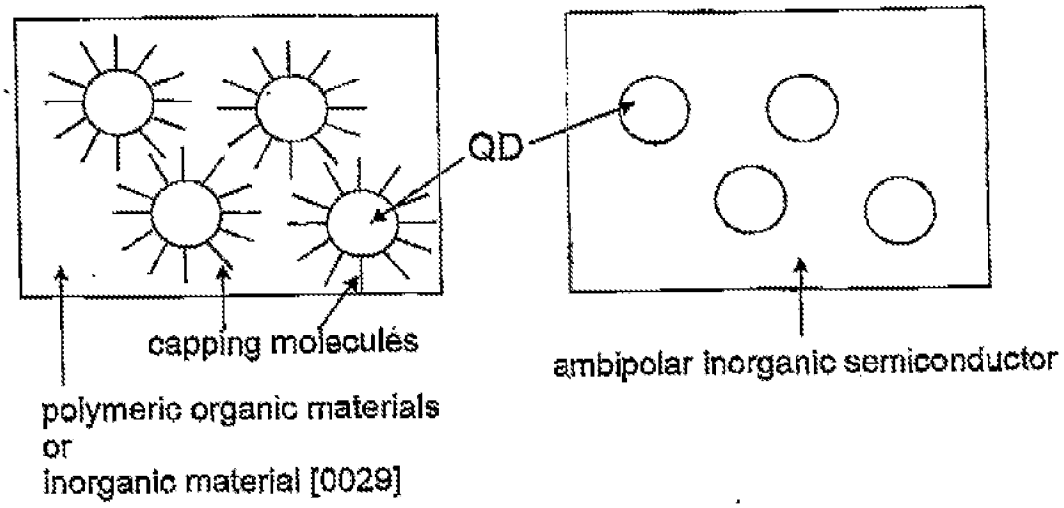
Claims 1, 4, 6, 8 and 9 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Bertram et al. (U.S. Patent Application Publication No. 2003/0042850) (hereinafter "Bertram"). In addition, claims 12 and 13 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bertram. Claims 2-3 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bertram in view of Danek et al. ("Electrospray Organometallic vapor deposition - A novel technique for preparation of Quantum Dot composites") (hereinafter "Danek"). Further, claims 5 and 7 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bertram in view of Mensz (U.S. Patent No. 5,422,902). Additionally, claim 10 has been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bertram in view Hayashi et al. (U.S. Patent Application Publication No. 2002/0167280) (hereinafter "Hayashi"). Finally, Claim 11 has been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bertram in view of Koyama et al. (U.S. Patent Application Publication No. 2003/0094897) (hereinafter "Koyama"). Applicants respectfully

traverse because Bertram does not disclose or suggest that the coating materials for coating the surfaces of the nanocrystals are eliminated from the surfaces of the nanocrystals.

Claim 1 presently recites a quantum dot-dispersed light emitting device comprising a substrate, an electron injection electrode, a hole injection electrode, and an inorganic light emitting layer disposed so as to be in direct contact with both the electrodes. The inorganic light emitting layer includes an ambipolar inorganic semiconductor material and nanocrystals constituting a quantum dot dispersed as luminescent centers in the ambipolar inorganic semiconductor material in which coating materials for coating surfaces of the nanocrystals are eliminated from the surfaces of the nanocrystals. The claim recites that it is configured without having, at the interface with the electron injection electrode and/or the hole injection electrode, epitaxial relation therewith.

Applicants respectfully traverse because Bertram does not disclose or suggest that the coating materials for coating the surfaces of the nanocrystals are eliminated from the surfaces of the nanocrystals. As an illustration, Applicants provide the following for the Examiner's convenience, illustrating Applicants' position:

Bertram The presently claimed invention



As illustrated above, Bertram requires capping the surface of a quantum dot (QD) with organic molecules. See Paragraph Nos. [0023] - [0025] of Bertram.

On the other hand, the present specification explains that organic molecules in the light emitting layer act to prevent a carrier from flowing in the quantum dot. The present specification describes that "post-annealing is carried out after dispersion, which can eliminate the material (such as trioctyl phosphine (TOP) or trioctyl phosphine oxide (TOPO)) coating the surfaces of nanocrystals (quantum dots). As a result, the transportability of carriers into quantum dots is enhanced, which can enhance the luminous efficiency." See Paragraph No. [0052] of the present specification.

Accordingly, as shown in the preceding illustration, the presently claimed invention, in which the entire light emitting layer comprises inorganic material, differs from the disclosure of Bertram which requires the capping of the QD surface with organic molecules in the light emitting layer.

Because the light emitting layer is inorganic (i.e., hardly includes carbon), the influence of impurities on electroluminescence is reduced, and a strong electroluminescence is achieved. In addition, the layer is more thermally stable than layers disclosed by the cited art (i.e., Bertram).

Accordingly, Applicants respectfully submit that the presently claimed invention is not anticipated by or rendered obvious by the cited references. Applicants respectfully request the reconsideration and withdrawal of these rejections.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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